# Giovanni Peccati, University of Luxembourg

October 12 @ 4:30 pm - 5:30 pm UTC+4

**Title**: “Stopping sets and phase transitions on the Poisson space”

**Abstract:** I will discuss several refinements of the Poincaré inequality on the Poisson space, based on the use of “restricted hypercontractivity”, stopping sets and continuous-time decision trees. One of the main estimates presented in my talk corresponds to an intrinsic, infinite-dimensional version of the “OSSS inequality” (O’Donnel, Saks, Schramm, Servedio, 2006), allowing one to control the fluctuations of a given functional by means of its decision tree complexity. The research discussed in my talk is partly motivated by the analysis of sharp phase transitions in continuum percolation models. If time permits, I will also discuss an intrinsic version of the Schramm-Steif inequality on the Poisson space – which is particularly adapted to capture noise sensitivity at criticality. Based on joint works with G. Last and D. Yogeshwaran (2021), and with I. Nourdin and X. Yang (2019).